

# Fetal period

## 3<sup>rd</sup> month to birth

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# Terminology

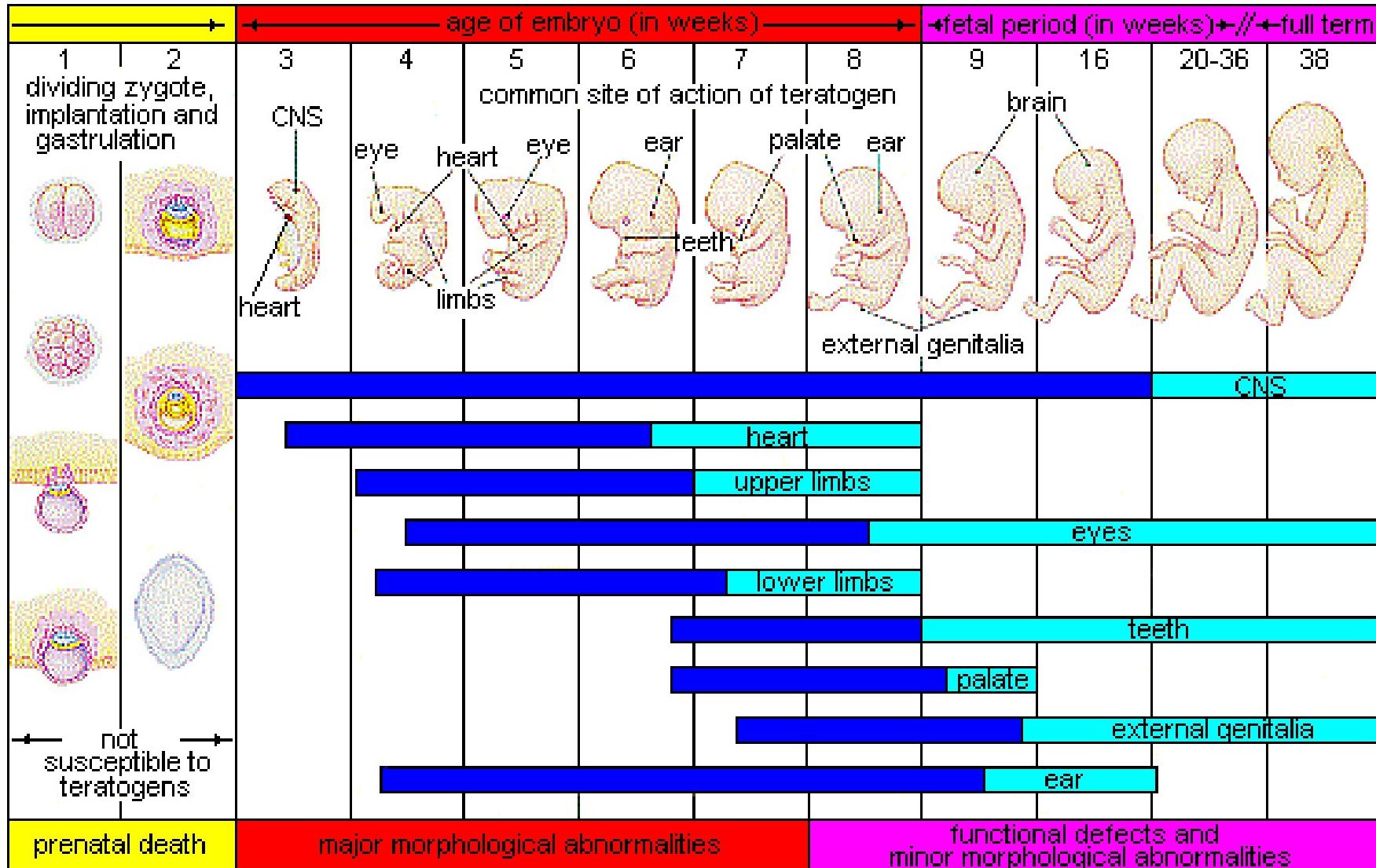
- **CRL: Crown-Rump Length** (Sitting height).
- **CHL: Crown-Heel Length** (Standing Height).
- **LNMP: Last normal menstrual period.**
- **Quickening:** The 1<sup>st</sup> feeling of the movement of the fetus.

# Introduction

- The fetal period is the period from the beginning of the 3<sup>rd</sup> month (9<sup>th</sup> week) up to the termination of pregnancy (40<sup>th</sup> week).
- This period is concerned with growth and differentiation of tissues & organs that began to develop in the embryonic period.
- Its associated with complete development of placenta, umbilical cord, and fetal membranes.

- The length of the fetus is usually indicated as the crown-rump length (CRL) (sitting height), or as the crown-heel length (CHL) (standing height).
- These measurements are expressed in cm & correlated with the age of the fetus in weeks or months.
- During 3<sup>rd</sup> to 5<sup>th</sup> months, growth in length is striking, while during the last 2 months growth in weight is striking.

- The length of pregnancy is considered to be 280 days, or 40 weeks after the onset of the last normal menstrual period (LNMP) or more accurately, 266 days or 38 weeks after fertilization.

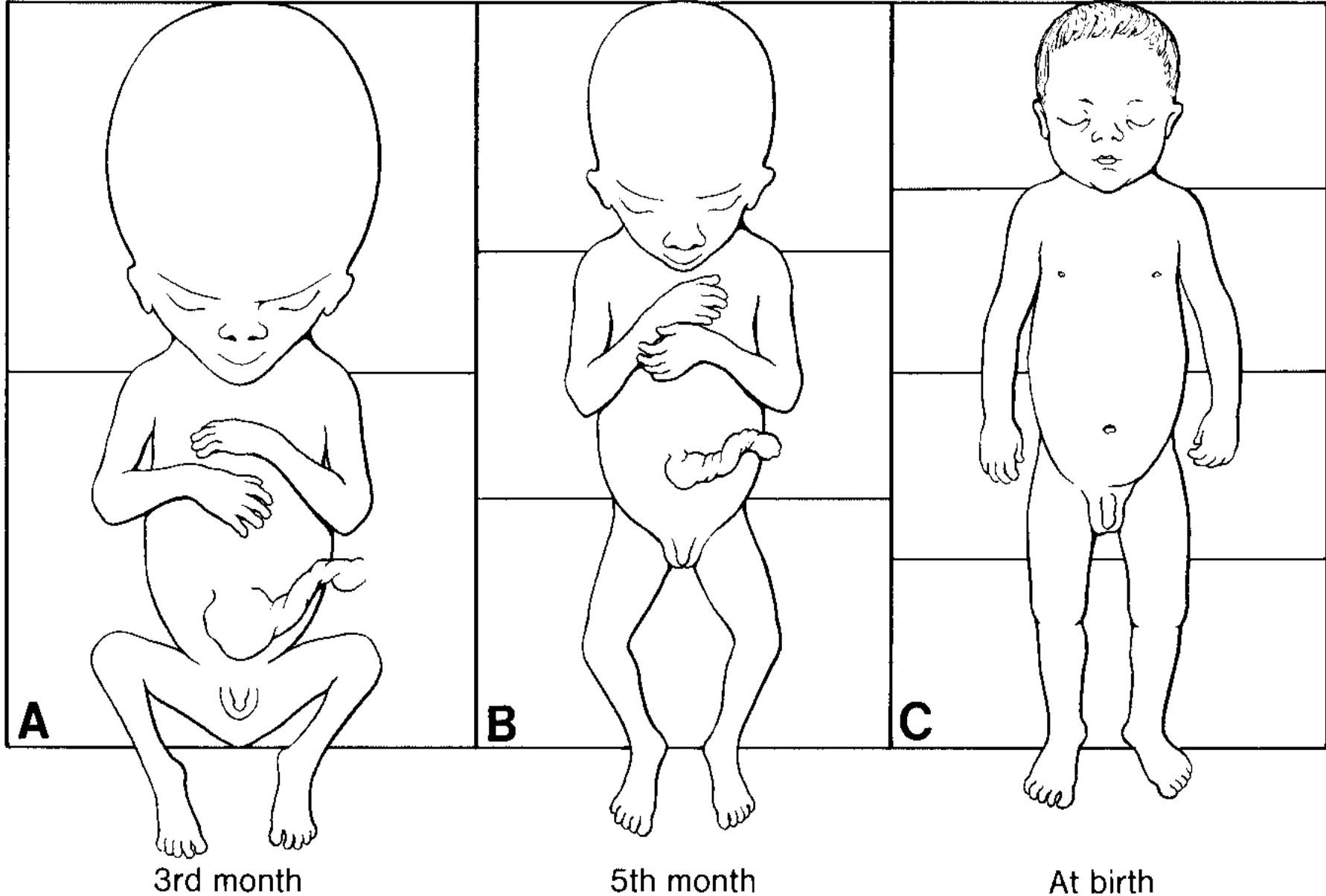


# Fetal Period Changes

# Weeks 9 to 12 (Stage of Initial Fetal Activity)

- Fetus is about 50 mm long and weight is 8 g.
- Head constitutes half the crown rump length of fetus.
- Face is broad, eyes get widely separated, ears are low set and eye lids gets fused.

- Movement begins.
- Genitalia are differentiated (sex of the fetus can be determined).
- Hair and nails begin to grow.
- Fingers and toes are separated.



## Weeks 13 to 16 (Period of Rapid Fetal Growth)

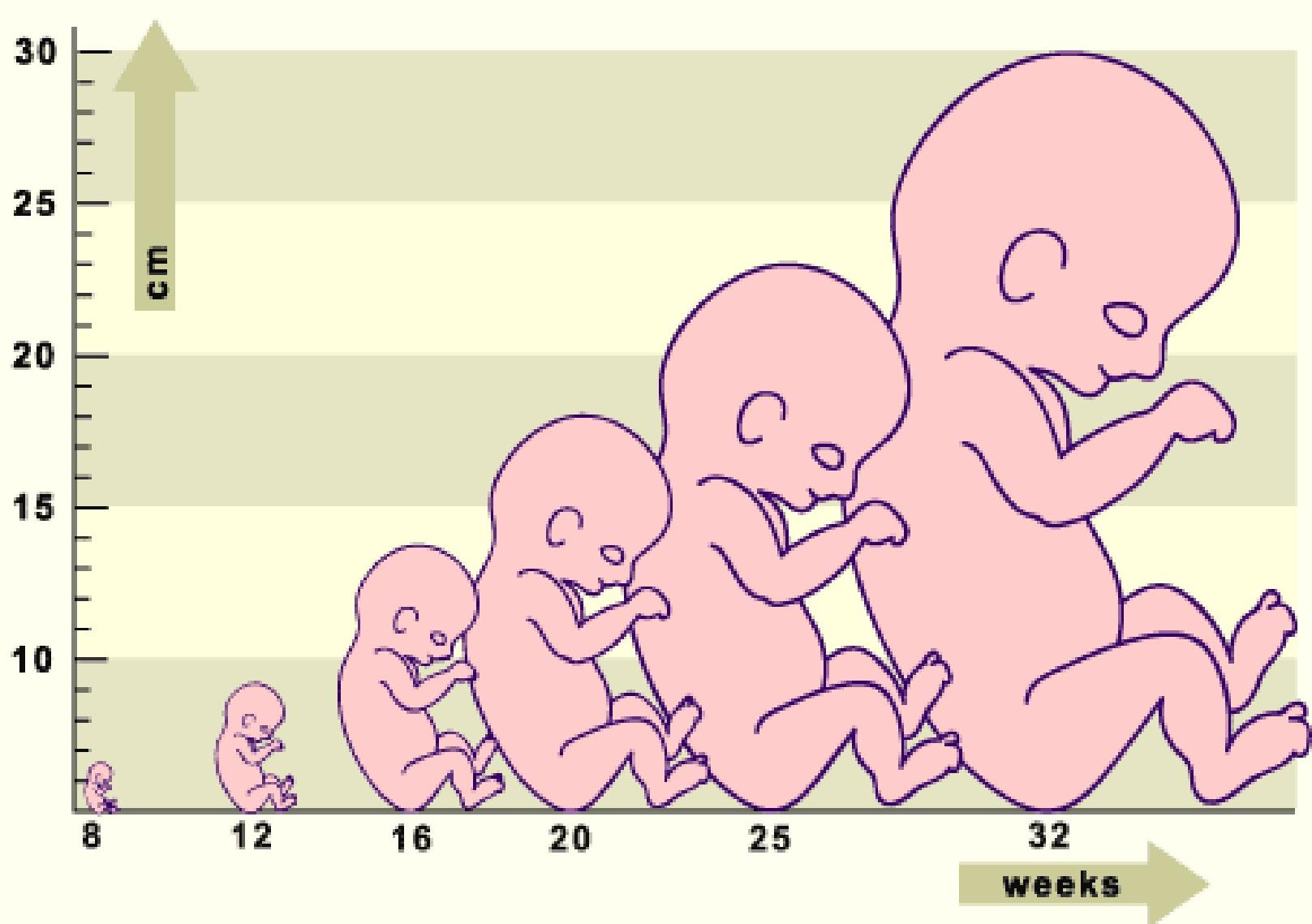
- ◎Growth is rapid.
- ◎Neck is getting longer and hands are becoming more functional.
- ◎Fetal skin is almost transparent.
- ◎Fetus makes active movements.

- Skeletal ossification progresses rapidly and is seen on x-ray by week 16.
- Scalp hair pattern gives some clue to early brain development.
- By end of 16th week sucking, swallowing and blinking are evident.



## Weeks 17 to 20

- Eyebrows & eyelashes appear.
- Mother feels fetal movements (quickenings).
- Nails appear on fingers & toes.
- By 18<sup>th</sup> week, uterus is formed & canalization has begun.
- By 20<sup>th</sup> week testes begin to descend.
- Fetal heart beat can be heard with stethoscope.





## Weeks 21 to 25

- ◉ There is much weight gain; the skin is wrinkled but is very translucent and is pink to red in color, with blood in the capillaries visible.
- ◉ WBCs are under production.
- ◉ Rapid eye movement begins.

- ◉ Proportions of body are quite similar to a new born.
- ◉ Fetus is able to hear.
- ◉ If born at this time, the fetus usually dies due to an immature respiratory system.

# Weeks 26 to 29

- The fetal eyes reopen.
- There is much subcutaneous fat formed, and the wrinkles of skin smooth out.
- Response to sounds grows.
- The central nervous system matures.
- Fetal body is getting plump & rounded.

- The fetus is viable and can survive if born prematurely, but the mortality is high as a result of respiratory problems, even though the lungs and pulmonary vasculature are developed for gas exchange.



## Weeks 30 to 34

- Length is about 38-43 cm weight is about 1,600 g.
- Bone marrow produces RBCs.
- The skin is smooth and pink, and the arms and legs are round and full.

# Weeks 35 to 38

- Fetus reaches a length of about 40-46 cm & weight is around 1,800-1,900 g.
- Fetus takes up the space in most of the uterus.
- Fetus is official full term.
- Circumference of head & abdomen are about same size.

## Weeks 39 & 40

- ◎ Fetus is around 50 cm in length & weighs about 3288 g.
- ◎ 15 % of baby's body is fat.
- ◎ By the 40<sup>th</sup> week Fetus is 51cm & weight is around 3400 grams.

# Clinical Correlates

## ❑ Low Birth Weight:

- Intrauterine growth restriction (IUGR).
- Intrauterine fetal death (IUFD)

**THANK YOU**